

### EPA/ORD - Assests for NSF's GRIP Participants

L/C/O	Location	POC	Estimated Internship Time Period	Potential Project Description	Professional Development Asset(s)
NRMRL	Cincinnati	Mark Rodgers	12 months	Intern will work with team studying the microbial ecology of building premise plumbing water systems. Metagenomic data will be collected on microbial communities. Intern will be involved in data analysis, including understanding community structure, physiological functioning of the community and the evolution of antibiotic resistance in communities after exposure to disinfectant treatment.	Lab space
NRMRL	Cincinnati	Darren Lytle	to 12 months	The student intern will work on a research team that is studying the effectiveness of drinking water treatment processes to reduce algal toxins from water during harmful algal blooms. The intern will perform bench- and pilot-scale studies to evaluate water treatment practices on algal toxin reduction. Intern will perform relevant water quality analyses necessary to make assessments. Lastly, the intern will perform data analysis and assist with preparation of technical communication outputs including journal manuscripts.	Lab space

NRMRL	Cincinnati	Darren Lytle	to 12 months	The student Intern will study the impact of water quality on the corrosion and metal solubility of drinking water distribution system materials including iron, lead and copper. The intern will perform bench- and pilot-scale research studies designed to systematically examine the impact of pH, alkalinity and other water quality parameters on the solubility of metals in water. The intern will perform routine water quality analyses and solids analysis tests (e.g., SEM, XRD, XRF) in support of the project. Lastly, the intern will perform data analysis and assist with preparation of technical communication outputs including journal manuscripts.	Lab space
NRMRL	Cincinnati	Darren Lytle	to 12 months	The intern will work on a team of scientists that is developing new solid media or modifying existing materials for the removal of contaminants such as arsenic and uranium from drinking water. Intern will work on the synthesis and production of new materials, characterization of the materials using advanced solids analysis instruments such as electron microscopes, and performing bench- and pilot-scale tests to assess the effectiveness of the new materials to remove contaminants of concern.	Lab space
NRMRL	Cincinnati	Darren Lytle	to 12 months	The intern will work on a team of scientists to apply biological water treatment to remove drinking water contaminants including nutrients such as nitrate from water. The intern will help develop engineering configurations that will allow naturally occurring bacteria to breakdown or remove contaminants of concern from water. The intern will operate pilot systems, evaluate treatment data and perform microbiological community assessment.	Lab space

NRMRL	Cincinnati	Darren Lytle	to 12 months	The student intern will work with drinking water scientists to develop scientific communication outputs for technical and non-technical audiences. Audiences may include homeowners, municipalities, engineering firms, and young students. The intern will transfer technical research findings, project progress report, and other technical data summaries into communication materials such as brochures, web-based outlets, webinars, etc... The intern will have the opportunity to apply creative design approaches to the work and develop new communication concepts.	Technical writing
NRMRL	Cincinnati	Darren Lytle	to 12 months	The student intern will work in a drinking water laboratory with chemists or microbiologists (depending on intern's field of study) to develop drinking water methods to ascertain the quality of drinking water. The effort will support engineering studies aimed at producing clean drinking water for small water systems. The intern will develop methods, systematically test the method, and report the findings.	Lab space
NHSRC	HQ	Stephen Clark - 202-564-3784	12 Months	Problem: Water utilities are facing large capital expenditures to replace aging infrastructure, upgrade facilities and combat challenges of more intense floods and droughts. The need for funding is enormous requiring careful consideration of priorities and their timing. Approach: Develop and apply economic techniques to estimate the future cost of capital investments and also the potential cost of damages due to inaction. (Inaction is not building a higher flood wall or replacing a failing water main.) This project would develop practical tools for water managers considering future investments in a life cycle range of 20-50 years and even 100 years.	Science Policy

NHSRC	RTP	Shawn Ryan - 919-541-0699	12 Months	Assessment of decontamination methods for critical infrastructure, including sensitive equipment and materials, contaminated with chemical, biological, or radiological contaminants. Includes assessment of the effectiveness of methods and the impact on equipment and materials through in-house testing.	Equipment use
NHEERL	Narragansett	Marisa Mazzotta	12 months	(note: time period could be shorter if desired) Environmental economics research on water quality policies and decisions, potentially including nutrient management, management of non-point sources, green infrastructure, restoration, evaluation of novel technologies. Depending on interests and skills, methods could include: non-market valuation, specifically application of benefit transfer methods or other valuation approaches using secondary data; developing approaches for decision makers to better incorporate economic considerations into policies; evaluation of environmental financing approaches and ways to pay for non-point source reductions; cost-effectiveness analysis; optimization approaches; systems dynamics approaches.	Mentoring, networking, presentations, technical writing, other
NHERRL	Narragansett	Jason Grear	12 months	Causes and Effects of Coastal Acidification	Mentoring
NHERRL	Narragansett	Jason Grear	3 months	Partitioning the Drivers of Coastal Acidification	Equipment use
NHERRL	Narragansett	Jason Grear	12 months	Biological Responses to Coastal Acidification	Lab space

NHERRL	Narragansett	Dr. Naomi Detenbeck	3 - 12 months	<p>The NSF graduate fellow will have an opportunity to learn about policies and science related to stormwater and integrated watershed management. The intern will have an opportunity to assist in evaluating the effects of natural and constructed green infrastructure best management practices on stream biotic and habitat condition in one of the following regions: New England, Delaware River Basin, Chesapeake Bay watershed, Austin, TX metropolitan area or California. Depending on the student's background and interests s/he will have an opportunity to apply and refine skills using geographic information systems (GIS), modeling of stream temperature or flow regimes or substrate quality, and modeling of ecological responses to urbanization and moderation of effects by BMPs.</p>	Mentoring; GIS; webinars; science policy; other
NHERRL	Narragansett	Dr. Naomi Detenbeck	3 - 12 months	<p>The NSF graduate fellow will have an opportunity to apply geographic information system (GIS) skills to contribute to EPA's Estuary Data Mapper application (<a href="http://www.epa.gov/edm">www.epa.gov/edm</a>). Areas of emphasis for this year's work on EDM include 1) support for assessment and management of nitrogen loading to coastal systems, 2) support for Integrated Water Resources Management cost-benefit analysis, specifically the Watershed Management Optimization Support Tool (WMOST), 3) visualization of the combined effects of climate, land-use and green infrastructure on habitat and biotic integrity for a series of pilot projects across the United States, and 4) development of training materials for specific decision-use cases.</p>	Mentoring; GIS; webinars; science communication; other

IOAA	HQ	Mary Manibusan	12 months	<p>The EPA's Office of Research and Development is leading the development of an Environmental Justice Research Roadmap that will integrate current research efforts and identify research gaps and priorities. Research activities addressing environmental justice issues are broad and encompass topics related to community engagement, adverse outcome pathways, social determinants of health, nonchemical stressors and cumulative impacts assessment. Recognizing the rapid advancement of research, and the need to focus on science that makes a difference in communities, this project will assist in the development of an inventory of research activities related to environmental justice. The NSF Intern would work in coordination with the ORD Environmental Justice Research Roadmap Workgroup members to complete the research roadmap by collating the current and future EJ research efforts within the agency and those available through open literature. In addition, the NSF intern would work with the EJ Research Coordinator to identify opportunities for partnership and collaboration with other federal agencies and academic institutes to address potential EJ research gaps.</p>	Science Policy, Technical Writing, Environmental Justice, Cumulative Risk Assessment, Federal Partnerships and Collaborations
NCER	HQ	<p>Sylvan Li (li.sylvana@epa.gov) Pasky Pascual (pascual.pasky@epa.gov)</p>	12 months	<p>Intern will work closely with a cross-Agency (EPA, USDA, USGS, State Department), cross-disciplinary, and cross-country team to model water quality and quantity in the Middle East region. Intern will be engaged in all aspects of modeling, including data management, statistical modeling, and data visualization. Additionally, the intern will prepare technical documentation including manuscripts for publication. Possible international travel.</p>	International collaboration. Work Space, mentoring, networking, training in data analytics.